

PRAKHAR GUPTA

<https://prakharguptaz.github.io/>

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RESEARCH INTERESTS

My research interests lie in natural language processing and machine learning in general, and specifically in problems related to deep generative models for natural language and dialog systems. I have 3 years of industrial research experience spanning multiple fields.

EDUCATION AND EXPERIENCE

PHD AND MS, LANGUAGE TECHNOLOGIES INSTITUTE

August 2018 - Present

Graduate Research Assistant

Carnegie Mellon University, PA, USA

GPA: 4.04

RESEARCH ASSOCIATE 2

July 2015 - August 2018

BigData Experience Lab, Adobe Systems, India

M.TECH. AND B.TECH. (DUAL DEGREE) IN CS

July 2010 - June 2015

Indian Institute of Technology, Roorkee, India

GPA: 8.95/10, Distinction awarded

PUBLICATIONS

1. **Prakhar Gupta**, Vinayshekhar Bannihatti Kumar, Mukul Bhutani, and Alan W Black. *Writer-forcing: Generating more interesting story endings*. In Proceedings of the Second Workshop on Storytelling. Association for Computational Linguistics, 2019.
2. **Prakhar Gupta**, Shikib Mehri, Tiancheng Zhao, Amy Pavel, Maxine Eskenazi and Jeffrey Bigham, *Investigating Evaluation of Open-Domain Dialogue Systems With Human Generated Multiple References*, SIGDIAL 2019
3. **Prakhar Gupta**, Gaurush Hiranandani, Harvineet Singh, Branislav Kveton, Zheng Wen, Iftikhar Ahamath Burhanuddin *Cascade Linear Submodular Bandits: Accounting for Position Bias and Diversity in Online Learning to Rank*, in Proceedings of the 35th Annual Conference on Uncertainty in Artificial Intelligence (UAI 2019)
4. **Prakhar Gupta**, Shubh Gupta, Ajaykrishnan Jayagopal, Sourav Pal, Ritwik Sinha, *Saliency Prediction for Mobile User Interfaces*, In 2018 IEEE Winter Conference on Applications of Computer Vision (WACV 2018)
5. Kokil Jaidka, Kaushik Ramachandran, **Prakhar Gupta**, and Sajal Rustagi. *SocialStories: Segmenting Stories within Trending Twitter Topics*, In Proceedings of the 3rd IKDD Conference on Data Science, 2016
6. **Prakhar Gupta**, Sandeep Kumar, Kokil Jaidka. *Summarizing Customer Reviews through Aspects and Contexts*, in International Conference on Intelligent Text Processing and Computational Linguistics, (CICLing 2015)

TEACHING AND RESPONSIBILITIES

INTERNSHIP MENTOR

Mentored multiple students at Adobe Research over their summers research internships.

TUTORING

Facilitated hour-long interactive tutorials with group of 30 students for Data Structures (CS-102) course.

COORDINATOR OF MOBILE APPLICATION DEVELOPMENT GROUP

Coordinator of Mobile Application Development group at IIT Roorkee. Co-led the team of application developers for Thomso 2013 application creation. Organized mobile application development competition at Ifest 2013.

SELECTED RESEARCH PROJECTS

<i>ORGANISATION</i>	CARNEGIE MELLON UNIVERSITY
May-July 2019	INVESTIGATING EVALUATION OF OPEN-DOMAIN DIALOGUE SYSTEMS WITH HUMAN GENERATED MULTIPLE REFERENCES Developed a framework for automatic evaluation of dialog systems using multiple-reference responses and showed that it achieves better correlation with human judgments both for quality and diversity. Addresses the one-to-many response problem in text generation. Presented this work at Sigdial 2019 conference.
May-July 2019	WRITERFORCING: GENERATING MORE INTERESTING STORY ENDINGS Developed a model to avoid generating predictable endings and generate more rare words with a modified weighted MLE loss and constraint it to remain relevant by conditioning on the keyphrases in the stories. Presented this work at the Storytelling Workshop at ACL 2019.
<i>ORGANISATION</i>	BIGDATA EXPERIENCE LAB, ADOBE, INDIA
May-July 2018	QUERY REFORMULATION USING SESSION CONTEXT AND IMAGE CAPTIONS Developed a query reformulation and recommendation system for a image search engine with sequence-to-sequence translation models that capture session context, and a multitask architecture that simultaneously optimizes the ranking of results. The model uses captions of clicked images as the target for supervision. Work in submission to a conference.
2015-2018	INTELLIGENT ALERTS AND AUTOMATION This technology provides personalized insights and alerts for marketers who use the Adobe Analytics product. I implemented an algorithm to learn user preferences in a bandit framework with the goal of learning to rank diverse items from partial user feedback, and then evaluated the algorithm on several real-world recommendation datasets.
<i>ORGANISATION</i>	INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE, INDIA
2014-2015	ASPECT DETECTION AND GROUPING FOR OPINION MINING Created a system to to extract aspects form reviews and summarize them into meaningful feature groups based on syntactic, semantic and contextual features. Part of this dissertation work was published in CICLING conference.

TECHNICAL SKILLS

- Python (including scikit-learn, Pandas, numpy, etc.), Java, C++, node.js, Javascript, React
- Experience with frameworks- Pytorch, Tensorflow, Keras, Hadoop, MapReduce, etc.
- Data mining, cleaning, and imputing, statistical data modeling, quick prototype development

RELEVANT COURSES

Topics in Deep Learning
Algorithms for NLP
Reinforcement Learning and Control
Multimodal Machine Learning

Machine Learning
Neural Networks for NLP
Design and Analysis of Algorithms
Object Oriented System Design

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